

# Student Paper Communication étudiante

## Ice road vets: Perspectives on the role of veterinarians in northern community health

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**Abstract** — We reflect on our experiences providing veterinary services in 5 remote communities of the Sahtu Settlement Area in the Northwest Territories in February 2017. The evolving role of dogs and the social determinants of health that influence dog health in the communities are explored, including biology, physical environment, behavior, dog and human social factors, and access to veterinary care. The importance of continued exposure of veterinary professionals to different cultural perspectives in order to provide services that are culturally appropriate and effective is highlighted.

**Résumé** — **Vétérinaires du Nord : perspectives sur le rôle des vétérinaires en santé communautaire dans les collectivités du Nord.** Nous examinons nos expériences lors de la prestation, en février 2017, de services vétérinaires dans cinq collectivités éloignées dans la région désignée du Sahtu des Territoires du Nord-Ouest. Nous explorons le rôle changeant des chiens et les déterminants sociaux de la santé qui influencent la santé canine dans les collectivités, notamment la biologie, le milieu physique, le comportement, les facteurs sociaux des chiens et des humains et l'accès aux soins vétérinaires. Nous soulignons l'importance de l'exposition continue des professionnels vétérinaires aux différentes perspectives culturelles afin de fournir des services qui sont efficaces et appropriés sur le plan culturel.

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### Introduction

Subsidized veterinary programs occur in underserved and marginalized communities worldwide (1–3). As well-meaning animal health practitioners delivering these programs, we often risk projecting a western veterinary medicine perspective and unintentionally marginalizing the people we hope to serve. Without first understanding the local and historical contexts, and our clients' relationships with animals, we may set up a situation of distrust that ultimately jeopardizes the likelihood of a mutually beneficial outcome (4,5). In an effort to provide the next generation of veterinarians with the tools to bridge different cultural perspectives and provide effective animal health care services, the University of Calgary Faculty of Veterinary Medicine (UCVM) annually delivers the Northern Community Health Rotation. This is a 4-week rotation in which final year

veterinary students work with remote communities in the Sahtu Settlement area, Northwest Territories (NWT), Canada, to provide preventive animal health care services as well as outreach and education on animal health and welfare to help promote community health. The rotation takes a One Health approach to provide future veterinarians with experience in delivering veterinary medicine in remote and culturally different settings with critical learning outcomes including cultural competencies and social accountability. In February 2017, JF, LS, MS, and MW participated in the Northern Community Health rotation as 4th year veterinary students and TB participated as a DVM and as an MSc student. Here we reflect on our experiences and the determinants of health for northern dogs.

### The setting

The Sahtu Settlement Area, NWT, is a 41 437 km<sup>2</sup> land claim area of the Sahtu Dene and Metis that was established in 1994 (6). The population of approximately 2500 people reside in 5 permanent communities: Norman Wells, Tulita, Délne, Colville Lake, and Fort Good Hope. These communities can only be accessed by ice roads and airplanes in the winter or by airplane and, for some communities, boat, in the summer. The cost of living is extremely high in all communities, 162% to 182% higher than that of Edmonton, Alberta. This, coupled with very low incomes, results in a high percentage of families that do not meet their basic needs (Table 1) (7).

Historically, dogs were an integral part of life for people of the Sahtu. The Dene people once led a nomadic lifestyle living

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**Table 1.** A socio-economic profile of the communities in the Sahtu region [adapted from the 2016 NWT Statistical Profile Table (7)].

Town	Population (2016)	Unemployment rate (2014)	Total personal annual income (2014)	Cost of living index (Edmonton = 100) (2013)	Traditional activities (2013)	Aboriginals speaking aboriginal languages (2014)
Norman Wells	803	7.4%	\$50 640	162.5	24.05%	39.0%
Tulita	500	14.2%	\$13 150	177.5	37.2%	41.5%
Délne	503	27.4%	\$15 820	167.5	47.7%	78.5%
Colville Lake	160	11.0%	—	182.5	60.7%	69.2%
Fort Good Hope	569	30.5%	\$13 810	177.5	38.3%	38.4%

off the land by hunting, trapping, and fishing. Their dogs travelled with them and assisted with transport, served as guard and hunting dogs, and as companions (8,9). Today, the Dene live in permanent communities and the role of the dog is transitioning, with sled dogs being widely replaced by the snowmobile. While dogs remain valued by people in the Sahtu, prior to 2008, the poor availability, accessibility, and affordability of primary veterinary services were major barriers to dog health, welfare, and population control (4). Veterinary care was restricted to those with the means to fly their animals to the closest veterinary clinic in Yellowknife. In response to community concerns about dog health and welfare, a needs assessment for veterinary services was done in 2008 (4). Based on the outcomes of this assessment, in 2009, the UCMV Northern Community Health rotation was initiated to provide subsidized annual veterinary services to the region.

## The northern rotation

### Classroom preparation

To prepare for this experience and gain the most from it academically and personally, and to deliver veterinary services in the best possible way, our first week focused on understanding the cultural and historical context, best practices in veterinary medicine given the unique setting, and on meeting with various stakeholders. Classroom sessions included a program overview, discussions on the determinants of health, a review of the *NWT Dog Act*, and determining protocols for vaccination, deworming, anesthesia, surgery, and post-surgical considerations in the context of the Sahtu clinics. The most powerful discussion about the historical relationships of First Nations with dogs was led by a member of the Stoney Nakoda First Nation. His stories illustrated the very important place dogs held in Indigenous society before colonization and how that role has changed with colonization. He also highlighted the complexities around dogs on First Nations reserves today, including issues associated with external groups imposing and perpetuating colonial perspectives on reserves without respect for traditional values and approaches. This conversation opened our minds to the historical context of First Nations relationships with animals, helping us to recognize different world views. During a 1-day stopover in Yellowknife *en route* to the Sahtu, meetings with government wildlife, public health, and municipal and community affairs representatives, the NWT SPCA, and a local veterinary practitioner, enabled us to understand their diverse roles, responsibilities, and perspectives on dogs in the communities.

### Ice road travel

In the Sahtu, we traveled *via* the winter roads to provide veterinary services to all 5 communities. With over 23 h driving at an average speed of 50 km/h, this mode of travel gave us a better appreciation for the vastness of the region, the remoteness of the communities, and the beauty of the land!

### Clinics

The veterinary clinics, held in the schools, a community hall, and a government laboratory, offered services including: physical examinations, vaccination, deworming, medical shaves, spays, neuters, and minor surgeries such as mass removals. Our goals were to deliver basic veterinary care and reduce the public health risks of zoonotic diseases, while also providing education on dog care, grooming, dog bite prevention, and population control. Importantly, services were always offered with a zero-pressure approach. We saw our role as one of informing and engaging the public with regard to animal health and welfare and public health, while respecting the individual's right to make the final decision on what services they were comfortable accessing at that time.

### House calls

House calls were offered in addition to the stationary clinics. Through this, we were able to examine, vaccinate, and deworm a greater proportion of animals in each community and get a better perspective of dog husbandry. House calls typically involved examination of dogs in their outdoor environments. Challenges included restraining dogs often unfamiliar with this type of handling, avoiding becoming entangled in dog chains, and preventing vaccines from freezing. In some cases, appointments were conducted inside homes, providing the opportunity to further connect with community members.

### Youth engagement

To engage the "next generation" of young people in the communities we held short, interactive classroom presentations, with topics varying from safety around strange dogs, the importance of spaying/neutering, and career opportunities in animal care. In addition, youth had the opportunity to tour the appointment and surgery areas, learn how to gown and glove, and to use equipment such as a pulse oximeter and stethoscope. Youth volunteers helped in the clinic and were essential housecall guides. Many youth expressed interest in pursuing further education in health sciences. We enjoyed meeting and connecting



**Figure 1.** Determinants of health of dogs in the Sahtu. The diagram shows what we think are the main determinants of health of dogs in the Sahtu, with images illustrating the connections among determinants.

with students on a personal level, seeing them caring for their animals, and witnessing their curiosity as they experienced veterinary medicine up close.

### Community interactions

Each community in the Sahtu region was unique. We spent time with local residents, listening to stories and gaining an appreciation for their way of life. We met school teachers and principals, municipal council members, hunters, former dog mushers, trappers, and elders. These different perspectives gave us a sense of each community, the place and role of dogs, and how communities have changed over time. These interactions helped us gain insight into Dene culture and better understand their views of animals and veterinary medicine. This was reinforced when we had the opportunity to spend a night in a community cabin accompanied by 2 Dene guides. We experienced the wilderness as a Dene trapper would: on foot and by snowmobile, watching the northern lights over a frozen river.

### Outcomes and insights: The social determinants of health

During the 9 clinic days, we saw a total of 279 animals: 236 dogs, 41 cats, and 2 rabbits, and performed 48 surgeries. The experience of delivering veterinary services in the Sahtu setting was invaluable; however, perhaps our greatest learning came from reflecting on the factors that influence the health of the northern dogs. Social determinants of health are the conditions, forces, and systems that shape daily life (10). Although this is a framework first developed for human health, it is broadly applicable to animal health. We identified several determinants of northern dog health that are worthy of discussion (Figure 1).

### Biology

One of the most visible determinants of health was the role of biology in the health of the dogs. Genetics and phenotypic displays influence their lives; from gender and behavior to hair coat and dental health. Northern dog breeds have evolved to cope with the elements, from sub-zero temperatures to extreme numbers of insects, and can live as healthy outdoor dogs. In contrast, some of the southern breeds with continuous growth or short coats may not be as well-equipped biologically to deal with northern conditions.

### Physical environment

The physical environment for many Sahtu dogs is outdoors with exposure to wildlife and weather, and a diet of mostly wild fish and game. For these dogs, encounters with wildlife can pose a health risk; rabies, parvovirus, distemper virus, and a variety of parasites circulating in local wildlife can, and do, spill over to community dogs (11). Conversely, most of the outdoor dogs fed a diet of whole fish, wild meats, and leftovers were in excellent body condition and had minimal to no dental tartar and gingivitis. Indoor dogs were fed primarily commercial dog food, and increasingly, outdoor dogs are being offered dry dog food too. Unfortunately, the local selection of pet foods is very limited and mostly of lower quality. We wonder how a shift from wild meats, which are an excellent source of protein, fats and moisture, to lower quality commercial dog food, will affect the health of outdoor dogs.

Outdoor dogs are also subject to extreme weather conditions and though most had access to a dog house they were, surprisingly, rarely found inside their shelters. We learned that northern breeds typically prefer to sleep on top of their houses, or on the downwind side, using the snow cover as insulation.

### Behavior and animal social factors

Many dogs in the Sahtu were seen expressing natural behaviors, such as roaming, playing, hunting, and guarding. Although roaming dogs engaged with each other and with tied dogs, we saw few injuries, and those we did see were relatively minor. The additional activity and social interactions these roaming dogs experience promote health, good body condition, and welfare. Similarly, outdoor dogs restrained in their yards experienced multiple social interactions each day, with owners, roaming dogs, and passing community members.

### Human social factors

Human social factors, such as the historical, social, and cultural context of dogs, income, policies and government priorities, education, and values, all influence dog health (10). The Sahtu communities embrace a mixture of traditional and modern practices and the roles that dogs play reflect this. Some dogs are still used for hunting and for guarding houses or camps, while others, often non-traditional breeds imported from the south, are considered primarily companions.

Income is a major limitation for animal health (Table 1). With veterinary services available in each community for only 2 days per year, and without the means to transport dogs to Yellowknife, the low average income of many Sahtu residents is one of the greatest limitations to dog health.

Policies also affect how people interact with and view dogs in the communities. The *NWT Dog Act* states that dogs running “at large” are to be taken into custody, but if they cannot be caught they can be humanely destroyed by being shot. This legislation was made to address dog attack and overpopulation issues. Shooting dogs as a means of animal control has resulted in negative psychological impacts and tension in communities, and we found community members and by-law officers actively seeking out alternatives to shooting dogs “at large.” Finally, education about dogs is important for dog health. In the Sahtu the annual veterinary clinic’s provide opportunities for meaningful interactions about dog health and welfare between the veterinary team and youth, teachers, and community members. Ongoing improvements in Internet access is also providing better access to information for community members.

### Access to veterinary care

Ten years ago, veterinary services were unavailable to these communities (4). With the advent of this rotation, veterinary services became available, accessible, and affordable. Unfortunately, these services are heavily subsidized, can only be offered once a year, and there is little availability of interim or emergency care. However, we were optimistic that our time spent working with youth and highlighting opportunities in animal health care would encourage young people to seek training and bring new skills back to their communities.

### Reflections: Professional development and educational experience

As we traveled through the Sahtu, we were struck by the closeness of the communities and the importance of dogs in the region. We also began to understand the complexity of providing animal health services in remote communities. In particular, we learned that, despite our enthusiasm, animal health was only one of many competing community priorities, including food security, human health and wellness, housing, and adapting to climate change. In reflecting on this experience, we feel it has improved us as veterinary practitioners. This is highlighted in our comments below:

- A broadened definition of Health: *Initially, I had concerns about the health of dogs that lived outdoors, ate home prepared and wild game diets, and were allowed to roam freely. Throughout the tour of the Sahtu I experienced first hand the good health of dogs that lived differently than I was accustomed to, which broadened my perspective on “what is health?” It is not just physical health but psychological and spiritual health as well. This has made me more open-minded as a practitioner.*
- Open-mindedness: *I understand that you inhibit the veterinary-client relationship when you jump to conclusions. You are not there to make people change, you are there to provide them with information to make a decision. There is often no single ‘right way.’ In listening to their point of view we might just learn something new!*
- Communication: *This rotation highlighted the success of an open, non-judgmental, zero pressure approach to communication. An approach that develops trusting relationships and allows for a*

*flow of knowledge in both directions. As a practitioner, I use this process of creating a safe and open environment multiple times a day.*

- Flexibility: *As students, we learn the full complement of diagnostic and treatment options available for a given clinical picture. As new practitioners, I think there is a deep desire to press toward the gold standard in every case; however, this is not realistic for many clients, whether it be in the Sahtu or elsewhere. As I evolve as a general practitioner, I feel that exposure to these limitations as a student fostered an increased creativity and flexibility when proposing diagnostic and treatment plans in cases with financial constraints.*

In conclusion, many other northern Canadian communities lack regular access to veterinary services (4). A formal evaluation of this program is underway in order to guide the program in the future, as well as to provide insights into the provision of veterinary services in other remote and culturally diverse communities. As students and veterinarians, the experiential and service learning improved our ability to communicate with people from different cultures, different education levels, and different economic statuses, as well as our understanding of the different perspectives and beliefs from which each client enters a conversation with a veterinarian.

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